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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,518	01/27/2004	Hideyuki Miyata	1614.1378	9958

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EXAMINER
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LEUNG, CHRISTINA Y

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5/1

<b>Office Action Summary</b>	<b>Application No.</b> 10/764,518	<b>Applicant(s)</b> MIYATA ET AL.	
	<b>Examiner</b> Christina Y. Leung	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some    \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1-27-04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-5, 8-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egnell et al. (US 6,590,681 B1) in view of Kinoshita (US 6,426,832 B1).

Regarding claims 1 and 4, Egnell et al. disclose an optical transmission apparatus with an optical add/drop function used in an optical wavelength multiplex network (Figures 3 and 4), comprising:

an optical branching coupler (such as drop coupler 17e) for dividing an input wavelength multiplexed optical signal into a wavelength multiplexed optical signal, which is called a passing signal, and another wavelength multiplexed optical signal, which is called a dropping signal,

a filter (BP filters 21 in Figure 3, or BP filters 37e in Figure 4) for extracting a first optical signal at a predetermined wavelength from the dropping signal that is branched by the optical branching coupler (column 5, lines 7-19),

a transmitter 13 for generating a second optical signal that is to be inserted,

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a blocking filter (such as BB filters 31e) for blocking a third optical signal contained in the passing signal that is branched by the optical branching coupler, the third optical signal having a wavelength that is the same as the second optical signal that is to be inserted (column 6, lines 5-67; column 7, lines 1-18), and

an optical coupler (such as add coupler 23e) for coupling the passing signal that is not blocked by and passes the blocking filter, and the second optical signal that is to be inserted.

Egnell et al. disclose transmitters 13 but do not explicitly disclose that they comprise lasers. However, optical transmitters comprising lasers are commonly known in the optical communications art, and Kinoshita in particular teaches lasers 22d (Figure 2) in an apparatus with an optical add/drop function that is related to the one disclosed by Egnell et al. Regarding claim 4 in particular, Kinoshita further teaches that lasers 22d are capable of changing the wavelength of the second optical signal to be generated (column 13, line 1).

Regarding claims 1 and 4, it would have been obvious to a person of ordinary skill in the art to specifically include a tunable laser as taught by Kinoshita et al. as the optical transmitter already disclosed by Egnell et al. in order to flexibly transmit signals having different wavelengths as desired in the communications network

Regarding claim 3, Egnell et al. disclose a filter including BP filters 21 (as shown in Figure 3) and 37e (as shown in Figure 4) but do not specifically disclose that the filter is capable of changing the wavelength of the first optical signal to be extracted. However, again, Kinoshita teaches an apparatus with an optical add/drop function (Figure 2) that is related to the one disclosed by Egnell et al., and Kinoshita further teaches a filter that is capable of changing the wavelength of an optical signal to be extracted (column 13, lines 27-29; column 38, lines 56-59).

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It would have been obvious to a person of ordinary skill in the art to include a tunable filter as taught by Kinoshita et al. as the optical filter already disclosed by Egnell et al. in order to flexibly receive signals having different wavelengths as desired in the communications network.

Regarding claim 5, Egnell et al. disclose that the blocking filter (including filters 31e) passes only a predetermined group of wavelengths (column 6, lines 5-67; column 7, lines 1-18).

Regarding claim 8, Egnell et al. disclose that the system includes a protection unit that comprises an optical coupler (such as coupler 23w) and an optical switch (such as switch 33w). Specifically, Egnell et al. disclose that one of the lines (for example, the “e” path as shown in Figure 4) is a working line while the other line (for example, the “w” path) is a backup line used for protection switching (column 9, lines 37-53). When traffic is switched to the protection line, switches such as switch 33w are switched to direct traffic to the protection line, and the traffic is coupled into the protection line with couplers such as coupler 23w.

Regarding claim 9, Egnell et al. disclose an optical wavelength multiplex network, comprising: the optical transmission apparatus as claimed in claim 1 and a double ring network that comprises a hub (Figure 1; column 2, lines 40-44; column 4, lines 16-49). Particularly, they disclose that one of the nodes may serve as a hub (column 11, lines 21-33).

Regarding claim 10, Egnell et al. disclose that the hub comprises an optical demultiplexer, an optical coupler, an optical switch, and an optical multiplexer. Since Egnell et al. disclose that one of the nodes in the network may serve as a hub, they disclose that a hub would comprise an optical demultiplexer such as BP filters 37e, an optical coupler such as coupler 17e, an optical switch such as switch 39e, and an optical multiplexer such as multiplexer 35e as shown in Figure 4 as part of a node.

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Likewise, regarding claims 11 and 13, Egnell et al. disclose that a hub comprises an optical filter such as BB filters 31e as shown in Figure 4 as part of a node, and/or a protection unit that comprises an optical coupler such as coupler 23w and an optical switch such as switch 33w. As similarly discussed above with regard to claim 8, Egnell et al. disclose that one of the lines (for example, the “e” path as shown in Figure 4) is a working line while the other line (for example, the “w” path) is a backup line used for protection switching (column 9, lines 37-53). When traffic is switched to the protection line, switches such as switch 33w are switched to direct traffic to the protection line, and the traffic is coupled into the protection line with couplers such as coupler 23w.

4. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egnell et al. in view of Kinoshita as applied to claim 1 above, and further in view of Nagel et al. (US 5,481,399 A).

Regarding claims 2 and 6, Egnell et al. in view of Kinoshita describe a system as discussed above with regard to claim 1, including a blocking filter and an optical coupler, but they do not specifically disclose that the blocking filter and optical coupler elements are combined into one body.

However, Nagel et al. teach a system that is related to the one described by Egnell et al. in view of Kinoshita including an apparatus with a blocking/filtering function and an optical coupling function for adding and dropping wavelengths in an optical communication system (Figures 2 and 2A-C). Regarding both claims 2 and 6, Nagel et al. further teach a blocking filter and an optical coupler combined into one body, wherein the one body passes only a

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predetermined group of wavelengths, and inserts only a predetermined group of wavelengths (Figures 2B and 2C; column 4, lines 4-44).

Regarding claims 2 and 6, it would have been obvious to a person of ordinary skill in the art to use a blocking filter and optical coupler combined into one body as taught by Nagel et al. as the blocking filter and coupler in the system described by Egnell et al. in view of Kinoshita in order to manufacture the two elements more efficiently as one element and also provide an additional filtering of the added channel to remove noise from the added channel.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Egnell et al. in view of Kinoshita as applied to claim 1 above, and further in view of Sridhar (US 5,778,118 A).

Regarding claim 7, Egnell et al. in view of Kinoshita describe a system as discussed above with regard to claim 1, including a filter (BP filters 21 in Figure 3, or BP filters 37e in Figure 4) for extracting a first optical signal at a predetermined wavelength from the dropping signal that is branched by the optical branching coupler as disclosed by Egnell et al. (column 5, lines 7-19).

Egnell et al. do not specifically disclose that the filter is one of an AOTF, a dielectric multilayer filter, an FGB type filter, and a Fabry-Perot type filter. However, various wavelength filters are known in the optical communications art, and Sridhar in particular teaches a system that is related to the one described by Egnell et al. in view of Kinoshita including an apparatus with an add/drop function (Figure 1). Sridhar further teaches filters 63A-63D for extracting predetermined wavelengths from a dropped signal branched from the transmission line and teaches that these filters may comprise FGB/Bragg grating type filters or Fabry-Perot type filters (column 5, lines 53-67; column 6, lines 1-37).

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Regarding claim 7, it would have been obvious to a person of ordinary skill in the art to use a FGB type filter or a Fabry-Perot type filter as suggested by Sridhar as the filter in the system described by Egnell et al. in view of Kinoshita as an engineering design choice of a known, widely available type of device to implement the filtering functions already disclosed by Egnell et al. The claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but merely amount to the selection of expedients known as design choices to one of ordinary skill in the art.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Egnell et al. in view of Kinoshita as applied to claims 1 and 9 above, and further in view of Adams et al. (EP 1063803 A1).

Regarding claim 12, Egnell et al. in view of Kinoshita describe a system as discussed above with regard to claims 1 and 9 above including a hub. Egnell et al. further disclose that the hub comprises an optical demultiplexer such as BP filters 37e and an optical multiplexer such as multiplexer 35e as shown in Figure 4 as part of a node, but they do not specifically further disclose that the hub may comprise a MEMS.

However, Adams et al. teach a system that is related to the one describe by Egnell et al. in view of Kinoshita including an apparatus with an add/drop function in an optical network further including a ring structure and a hub (Figures 1 and 6). Adams et al. further teach that the hub may include a MEMS 650 (Figure 6; column 9, lines 38-58; column 10, lines 1-50).

It would have been obvious to a person of ordinary skill in the art to include a MEMS such as suggested by Adams et al. in the system described by Egnell et al. in view of Kinoshita in order to flexibly direct certain wavelengths as desired (Adams et al., column 10, liens 18-38).



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Also, Examiner respectfully notes that Egnell et al. already disclose that the hub may comprise a switch such as switch 39e or 33w as shown in Figure 4 as part of a node, and Adams et al. also simply teach that MEMS are known types of optical switches. It also would have been obvious to a person of ordinary skill in the art to use a MEMS as suggested by Adams et al. as the switch already disclosed in the system described by Egnell et al. in view of Kinoshita as a way implement the switch already disclosed by Egnell et al. that is advantageously small, low cost, and low power compared to other types of optical switches (Adams et al., column 10, lines 44-50).

### *Conclusion*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

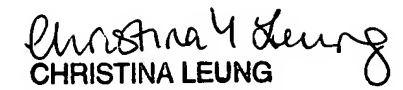
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
CHRISTINA LEUNG  
PRIMARY EXAMINER